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32294

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08/04/2008

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VIENNA, VA 22182-6212

EXAMINER

MOORE JR, MICHAEL J

ART UNIT

PAPER NUMBER

2619

DATE MAILED: 08/04/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,225	04/01/2004	Johnson Yen	58268,00373	5371

TITLE OF INVENTION: INDIVIDUALLY PROGRAMMABLE MOST SIGNIFICANT BITS OF VLAN ID

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/04/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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(Depositor's name)
(Signature)
(Date)

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10/814,225	04/01/2004	Johnson Yen	58268.00373	5371

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nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/04/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
MOORE JR, MICHAEL J	2619	370-392000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
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- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 861 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 861 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/814,225

Examiner

MICHAEL J. MOORE JR

Applicant(s)

YEN ET AL.

Art Unit

2619

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed 6/19/08.
2. ☒ The allowed claim(s) is/are 1-3,5,7 and 11-18 (renumbered 1-13).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Drawings

1. An additional drawing Figure 5 was received on 6/19/08. This drawing is acceptable and has been entered.

Specification

The Amendment made to the specification adding paragraphs 24 and 25 provided in Applicant's present amendment is proper and has been entered in the record.

Allowable Subject Matter

2. Claims **1-3, 5, 7, and 11-18** (*renumbered 1-13*) are allowed.
3. The following is an examiner's statement of reasons for allowance:

Regarding claim **11**, "Applicant's Admitted Prior Art" (AAPA) teaches where an incoming frame's MAC destination address and the VID are hashed (converted) by a switch to a 12-bit ARL address which is used to access the ARL table as spoken of on page 2, paragraph 4, lines 3-5.

AAPA further teaches the switch that compares the VID and MAC address in the ARL table with the incoming frame's VID and MAC destination address, and if they are the same, determines an ARL hit occurred, and the action code in the ARL table is then used to determine which egress port(s) to send the incoming frame to as spoken of on pages 2-3, paragraph 4, lines 5-10.

AAPA further teaches that if there is a match in the VLAN table, the switch uses the forward map in the VLAN table to forward the incoming frame to the appropriate destination port(s) as spoken of on page 3, paragraph 4, lines 15-18.

Ullum et al. (U.S. 6,266,705) teaches a look-up mechanism where a data RAM 340 of Figure 3 contains entries having MAC/VLAN designation pairs (VID) that may be located in either LSB or MSB locations in accordance with the particular hash key used as spoken of on column 7, lines 21-40.

AAPA, Ullum et al., as well as the other prior art of record do not teach "comparing an ARL VID and a MAC address from the address resolution table with the MAC destination address and less significant bits of the VID from the incoming frame to determine if there is an ARL hit" as well as "comparing a VLAN VID from the VLAN table with more significant bits of the VID of the incoming frame, wherein if the VLAN VID is the same as the more significant bits of the VID of the incoming frame, there is a VLAN match" in combination with the other limitations of claim 11.

Regarding claims 12-14, these claims are further limiting to claim 11 and are thus also allowable over the prior art of record.

Regarding claim 15, *AAPA* teaches the switch 102 (apparatus) of Figure 1.

AAPA further teaches where an incoming frame's MAC destination address and the VID are hashed (converted) by a switch (converting means) to a 12-bit ARL address which is used to access the ARL table as spoken of on page 2, paragraph 4, lines 3-5.

AAPA further teaches the switch (comparing means, means for using) that compares the VID and MAC address in the ARL table with the incoming frame's VID and MAC destination address, and if they are the same, determines an ARL hit occurred, and the action code in the ARL table is then used to determine which egress

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port(s) to send the incoming frame to as spoken of on pages 2-3, paragraph 4, lines 5-10.

AAPA further teaches that if there is a match in the VLAN table, the switch uses the forward map in the VLAN table to forward the incoming frame to the appropriate destination port(s) as spoken of on page 3, paragraph 4, lines 15-18.

AAPA further teaches an Ethernet switch (switch) that uses an Address Resolution Table as well as a VLAN table on page 2, paragraph 3, lines 1-3 of the specification.

AAPA also teaches each entry of the ARL storing a VLAN ID (ARL VID), a MAC address, and an action code as spoken of on page 2, paragraph 3, lines 4-6.

AAPA also teaches each entry of the VLAN table storing a VLAN forward map and a VLAN un-tag map as spoken of on page 2, paragraph 3, lines 8-10.

Ullum et al. teaches a look-up mechanism where a data RAM 340 of Figure 3 contains entries having MAC/VLAN designation pairs (VID) that may be located in either LSB or MSB locations in accordance with the particular hash key used as spoken of on column 7, lines 21-40.

AAPA, *Ullum et al.*, as well as the other prior art of record do not teach "comparing means for comparing an ARL VID and a MAC address from the address resolution table with the MAC destination address and less significant bits of the VID from the incoming frame to determine if there is an ARL hit" as well as "comparing means for comparing a VLAN VID from the VLAN table with more significant bits of the VID of the incoming frame, wherein if the VLAN VID is the same as the more significant

bits of the VID of the incoming frame, there is a VLAN match" in combination with the other limitations of claim **15**.

Regarding claims **1-3, 5, 7, and 16-18**, these claims are further limiting to claim **15** and are thus also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

4. Applicant's arguments with respect to the rejections of claims **15-18** under 35 U.S.C. 112 1st paragraph in view of the added Figure 5 and supporting disclosure have been fully considered and are persuasive. These rejections have been withdrawn.

5. Applicant's arguments with respect to the prior art rejections of claims **1-3, 5, 7, and 11-18** under 35 U.S.C. 103 have been fully considered and are persuasive. Specifically, it is agreed by Examiner that *AAPA*, *Ullum et al.*, and the other prior art of record do not teach the specific less significant bit and more significant bit comparison steps listed above. These rejections therefore have been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. MOORE, JR., whose telephone number is (571)272-3168. The examiner can normally be reached on Monday-Friday (7:30am - 4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached at (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J. Moore, Jr./
Examiner, Art Unit 2619

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2619
7/28/08